

### ABSTRACT

A group of multiple hollow fibers may be shaped to introduce angular divergence among the fibers, or to introduce a selected longitudinal oscillation into the fibers. In one shaping technique, the fibers are held in parallel while upper and lower crimping assemblies of parallel crimping bars are drawn together on opposite sides of the parallel fibers. When bars of the opposing assemblies draw sufficiently close, they sandwich the fibers in between them, causing each fiber to assume a shape that oscillates as the fiber repeatedly goes over and then under successive bars. Since the crimping bars are aligned at oblique angles to the fibers, the peaks and troughs of successive fibers are offset. While in this position, the fibers are heated and then cooled to permanently retain their shapes. A different shaping technique utilizes a lattice of criss-crossing tines defining multiple apertures. In this technique, the lattice and fibers are positioned so that each fiber passes through one of the apertures. Then, the lattice and/or the fibers are slid apart or together until the lattice holds the fibers in a desired configuration, where the fibers have a prescribed outward divergence relative to each other. While in this position, the fibers are heated and then cooled to permanently retain this angular divergence. The heating can be effected using heating fluid or gas circulated in the bars.